

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-3. (cancelled)

4. (currently amended) Internal-combustion engine having four cylinders in a V-arrangement, having a crankshaft and having a first balancing shaft for reducing the free inertial forces of the second order which is arranged below and parallel to the crankshaft.

wherein a second balancing shaft is provided in a point of intersection of the cylinder Vs above the crankshaft.

wherein the rotation center points of the first balancing shaft, of the second balancing shaft and of the crankshaft are situated on a perpendicular axis of symmetry which extends through the point of intersection.

wherein the second balancing shaft is arranged in a main lubricant duct for supplying main bearings of the crankshaft and spraying nozzles for the piston cooling with lubricant.

wherein the second balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights, and

~~Internal-combustion engine having balancing shafts according to Claim 3,~~ wherein the second balancing shaft has partial milled-out sections on the circumference, and a tube is arranged as a guiding duct in the interior.

5. (currently amended) Internal-combustion engine having four cylinders in a V-arrangement, having a crankshaft and having a first balancing shaft for

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

reducing the free inertial forces of the second order which is arranged below and parallel to the crankshaft,

wherein a second balancing shaft is provided in a point of intersection of the cylinder Vs above the crankshaft,

wherein the rotation center points of the first balancing shaft, of the second balancing shaft and of the crankshaft are situated on a perpendicular axis of symmetry which extends through the point of intersection, and

~~Internal combustion engine having balancing shafts according to Claim 1, wherein the first balancing shaft is disposed on a covering plate of the internal-combustion engine.~~

6. (original) Internal-combustion engine having balancing shafts according to Claim 5, wherein the first balancing shaft encloses a lubricant channel and has eccentric weights and outlet openings for feeding lubricant from the channel to bearings supporting the first balancing shaft.

7. (original) Internal-combustion engine having balancing shafts according to Claim 6, wherein the eccentric weights are formed by milled out sections on circumferential portions of the first balancing shaft.

8-13. (cancelled)

14. (new) Internal-combustion engine having four cylinders in a V-arrangement, having a crankshaft, having a first balancing shaft for reducing the free inertial forces of the second order which is arranged below and parallel to the crankshaft, and having a second balancing shaft above the crankshaft, the rotation center points of the first balancing, of the second balancing shaft and of the crankshaft being situated on a perpendicular axis of symmetry, wherein in the point of intersection of the cylinder Vs, a main lubricant duct is provided for supplying main bearings of the crankshaft as well as spraying nozzles for the

Application No. 10/777,177  
Reply dated November 28, 2004  
Response to Office Action dated August 25, 2004

piston cooling with lubricant, and the second balancing shaft is arranged within the main lubricant duct.

15. (new) Internal-combustion engine having balancing shafts according to Claim 14, wherein the second balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights.

16. (new) Internal-combustion engine having balancing shafts according to Claim 15, wherein the second balancing shaft has partial milled-out sections on the circumference, and a tube is arranged as a guiding duct in the interior.

17. (new) Internal-combustion engine having balancing shafts according to Claim 14, wherein the first balancing shaft is disposed on a covering plate of the internal-combustion engine.

18. (new) Internal-combustion engine having balancing shafts according to Claim 17, wherein the first balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights.

19. (new) Internal-combustion engine having balancing shafts according to Claim 17, wherein the first balancing shaft has partial milled-out sections on its circumference, and a tube is arranged as a guiding duct in the interior.

20. (new) An internal-combustion engine comprising:

four cylinders arranged in a V-arrangement and having a point of intersection;

a crankshaft having main bearings and a rotation center point;

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

a first balancing shaft for reducing free inertial forces of the second order, the first balancing shaft having a rotation center point and being arranged below and parallel to the crankshaft;

a second balancing shaft arranged above the crankshaft and having a rotation center point, the rotation center points of the first balancing shaft, of the second balancing shaft and of the crankshaft being situated on a perpendicular axis of symmetry;

spraying nozzles for cooling pistons with lubricant; and

a main lubricant duct disposed at the point of intersection of the cylinder Vs for supplying the main bearings of the crankshaft and the spraying nozzles, wherein the second balancing shaft is arranged within the main lubricant duct.

21. (new) The internal-combustion engine according to Claim 20, wherein the second balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights.

22. (new) The internal-combustion engine according to Claim 21, wherein the second balancing shaft has partial milled-out sections on its circumference, and a tube is arranged as a guiding duct in the interior.

23. (new) The internal-combustion engine according to Claim 20, wherein the first balancing shaft is disposed on a covering plate of the internal-combustion engine.

24. (new) The internal-combustion engine according to Claim 23, wherein the first balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights..

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

25. (new) The internal-combustion engine according to Claim 23, wherein the first balancing shaft has partial milled-out sections on its circumference, and a tube is arranged as a guiding duct in the interior.

26. (new) A balancing assembly for an internal-combustion engine including four cylinders arranged in a V-arrangement and having a point of intersection and a crankshaft having main bearings and a rotation center point, the balancing assembly comprising:

a first balancing shaft for reducing free inertial forces of the second order, the first balancing shaft having a rotation center point and being arranged below and parallel to the crankshaft;

a second balancing shaft arranged above the crankshaft and having a rotation center point, the rotation center points of the first balancing shaft, of the second balancing shaft and of the crankshaft being situated on a perpendicular axis of symmetry;

spraying nozzles for cooling pistons with lubricant; and

a main lubricant duct disposed at the point of intersection of the cylinder Vs for supplying the main bearings of the crankshaft and the spraying nozzles, wherein the second balancing shaft is arranged within the main lubricant duct.

27. (new) The balancing assembly according to Claim 26, wherein the second balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights.

28. (new) The balancing assembly according to Claim 27, wherein the second balancing shaft has partial milled-out sections on its circumference, and a tube is arranged as a guiding duct in the interior.

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

29. (new) The balancing assembly according to Claim 26, wherein the first balancing shaft is disposed on a covering plate of the internal-combustion engine.

30. (new) The balancing assembly according to Claim 29, wherein the first balancing shaft has a lubricant feeding device, a guiding duct, outlet openings and eccentric weights.

31. (new) The balancing assembly according to Claim 29, wherein the first balancing shaft has partial milled-out sections on its circumference, and a tube is arranged as a guiding duct in the interior.

Application No. 10/777,177  
Reply dated November 23, 2004  
Response to Office Action dated August 25, 2004

RECEIVED  
CENTRAL FAX CENTER

NOV 23 2004

**ADDITIONAL CLAIMS FEE CHART**

Transmitted herewith is an Amendment for filing and the filing fee is calculated below:

<u>For</u>	<u>No. After Amendment</u>	<u>Highest No. Prev Paid</u>	<u>No. Extra</u>	<u>Rate</u>	<u>Fee</u>
Total Claims	22	20	= 2	X \$18	= \$36.00
Indep. Claims	5	3	= 2	X \$88	= \$176.00
<b>TOTAL:</b>					<b>\$212.00</b>

The Commissioner is hereby authorized to charge the \$212.00, along with any additional requisite fees, or credit any overpayment to Account No. 05-1323 (Docket #080443.53052US).

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**